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California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

RE: Pacific Gas and Electric Company Comments on the Draft 2022 State Strategy for the State Implementation Plan

Pacific Gas and Electric Company (PG&E) appreciates this opportunity to comment on the California Air Resources Board's (CARB) Draft 2022 State Strategy for the State Implementation Plan (SIP) released on January 31, 2022. PG&E would like to thank CARB for its efforts in identifying control measures and emission reduction actions across all emission categories and continued public engagement in developing the SIP.

PG&E offers the following comments to facilitate CARB's development of a robust SIP that is comprehensive in nature and wide-ranging in approach and application. Our comments are organized by chapter, as laid out in the SIP.

I. Chapter 5 – State SIP Measures

A. Proposed Measures: On-Road Medium- and Heavy-Duty Vehicles

PG&E supports electrification for medium- and heavy-duty fleets to reduce California's greenhouse gas (GHG) emissions, oxides of nitrogen (NOx) emissions, and particulate matter. PG&E is supporting these efforts through its Service Planning department, as well as via its dedicated Electric Vehicle (EV) Fleet infrastructure program and Commercial EV rates that offer predictable, affordable prices. PG&E's $236 million EV Fleet program will provide make-ready infrastructure for 6,500 non-light-duty EVs (delivery trucks, transit buses, etc.) at 700 sites over a five-year period and PG&E's Business EV rate can provide customers with substantial fuel cost savings when transitioning to an electric vehicle. PG&E supports CARB's efforts to accelerate transportation electrification and reduce emissions via the Advanced Clean Fleets (ACF) rulemaking and other measures described in the SIP.

PG&E has engaged extensively with CARB and key stakeholders throughout the ACF rulemaking process and looks forward to a rule that achieves substantial emission reductions. PG&E recognizes that infrastructure is critical to the success of fleets covered by the ACF rule, and the need for increased and extensive communication and planning to overcome the

challenges of building out the charging and fueling infrastructure. Any fleet data that can be shared with utilities will be key to the successful and expedited build out of infrastructure to support complying fleets.

PG&E also supports the transition of fleets to zero-emission vehicles (ZEVs) but will note that given the timelines suggested in the SIP, there may not be enough ZEVs available to meet the proposed timelines. PG&E's efforts to electrify our fleets are underway. However, there has been a lack of announced product in the Class 3 through 5 truck space and supply chain constraints around batteries continue to hamper rollouts of electric vehicles already in production.

If the batteries are not available, the automakers cannot build the ZEVs we need to be compliant with CARB's fleet standards. PG&E encourages CARB to work with automakers and adopt incentives to ensure transparency for ZEV fleets in the coming years. Automakers usually guide their advanced product planning multiple years ahead and adopting incentives and programs now is essential to ensure enough vehicles are available for fleets to acquire by the deadlines proposed.

Incentive programs for zero-emission trucks are an essential component of the transition to a 100% zero-emission truck future, as well as an essential component of retirement. PG&E supports market-based measures to encourage turnover of combustion fleets to ZEV fleets. Incentive policies or programs should prioritize investments and deployments benefiting priority communities exposed to disproportionate levels of harmful criteria pollution from trucks via ports and freeways. This is not only equitable, but also economically advantageous; climate investments located in California's priority communities have supported more jobs per million dollars than investments located elsewhere.

Development of low/zero-emissions zones could have significant impacts to the communities where these zones are located. PG&E encourages CARB to prioritize community feedback in the development of this Proposed Action to ensure there is no undue economic harm in the impacted communities.

PG&E supports lowering registration fees for EVs and encourages CARB to consider such actions earlier than 2035. Because registration fees are based on the cost of the vehicle, registration fees today can pose a significant cost barrier for customers who are transitioning to a ZEV fleet with higher upfront vehicle costs. Increasing registration fees for internal combustion engine vehicles while lowering those for ZEVs is a market mechanism that can have an immediate impact and help support fleets transitioning as part of the ACF rulemaking.

B. Proposed Measures: Residential and Commercial Buildings

PG&E recognizes the important role that building electrification must play to meet California's climate goals and supports CARB's efforts to reduce building emissions as described in the SIP. PG&E's efforts to decarbonize the building sector reflect the various

needs of customers and communities such as incentives, technical support, and advocacy. Through its Codes & Standards Program, PG&E provides technical support and analysis to understand the potential impacts of new policies to state agencies and local jurisdictions preparing for workshops and rulemakings. The State of California and over 50 local jurisdictions are addressing decarbonization from a policy perspective through advancements in building codes and appliance standards. PG&E has provided written support for these state and local efforts where they are cost effective and reduce emissions for our customers.[1]

PG&E's innovative WatterSaver program and the upcoming California Energy-Smart Homes Program, will also incentivize low-carbon solutions in the building sector.[2] These building electrification programs are complemented by a robust series of PG&E-led electric vehicle, demand response, and resiliency efforts, as well as state-wide programs like BUILD and TECH, further enabling our clean energy future. In the California Public Utilities Commission Building Decarb proceeding (R.19-01-011), PG&E recently supported the elimination of gas line extension allowances, discounts and refunds for all residential customers and for non-residential customers where there was not a financial or environmental benefit to customers.[3] In February, PG&E filed our 2024-2031 Energy Efficiency Business Plan, which includes a commitment to achieve 35.4 million metric tons (MMT) of cumulative lifecycle carbon dioxide (CO_2) emission reductions through a portfolio that advances decarbonization and building electrification strategies.[4] The portfolio also includes a proposal to remove financial support for natural gas equipment, except where there is no viable electric alternative.

PG&E advocates for more efficient appliances and more test procedures to protect customer investments and deliver promised energy performance over the life of the appliance. As momentum to replace fossil fuel appliances increases, it is essential that the State encourage higher-performing electric appliances that will deliver on decarbonization while keeping utility bills manageable. PG&E also encourages continued interagency collaboration with the California Energy Commission, Department of Housing and Community Development, and California Building Standards Commission on topics related to building decarbonization and appliance standards to ensure the agencies advance toward state goals in tandem.

From an equity and affordability standpoint, PG&E urges CARB and other state agencies to prioritize opportunities that achieve both building emission reductions through electrification and gas system cost reduction instead of attempting electrification through a specific appliance approach as described in Chapter 5: State SIP Measures *Residential and Commercial Buildings*. When building electrification enables reduced or avoided gas system expenditures—such as when entire neighborhoods are electrified—all customers benefit, not only those living or working in the all-electric building. Piecemeal ordinances or regulations targeted at residential furnaces and water heaters provide a familiar programmatic format, but

[1] PG&E Comments on 2022 Energy Code Pre-Rulemaking (Docket Number 19-BSTD-03).
[2] PG&E's WatterSaver Program is a behind-the-meter thermal energy storage program with a goal of reducing peak load by using new heat pump water heaters and smart controls on existing electric resistance water heaters and heat pumps to shift load away from peak usage hours.
[3] https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M434/K000/434000388.PDF.
[4] Application of Pacific Gas and Electric Company for Approval of 2024-2031 Energy Efficiency Business Plan and 2024-2027 Portfolio Plan.

troubling consequences for energy affordability. Though customers able to replace individual appliances will see lower gas bills, those replacements do not lower the cost of the gas system; instead, remaining gas customers will absorb those costs. As E3 notes, "A managed gas transition would likely require some amount of targeted or zonal electrification, to enable a reduction in the gas distribution infrastructure. Without a managed gas transition and without any effort to target electrification, it would be difficult to reduce the size or scale of gas system investments and costs."[5] In order to maintain safety and reliability, the natural gas system comes with necessary operations and maintenance needs, the costs of which are approved by the California Public Utilities Commission (CPUC) in PG&E's General Rate Case. PG&E strongly recommends strategies that focus on "win-win" outcomes such as replacing gas appliances while decreasing the size and scope of PG&E's gas infrastructure.

Geographically targeted ("zonal") electrification and whole-building approaches are key strategies to enable an economic and fair transition. The gas system and its associated maintenance costs are mostly fixed, and do not change as customer demand for gas falls. Gas rates are likely to rise to unsustainable levels if those fixed costs are spread over a smaller base of gas customers. If, instead, a customer or subset of customers were to fully electrify, the infrastructure associated with that portion of the gas system could be retired or downrated, potentially leading to a more equitable decarbonization transition by mitigating future gas system investments and operation-and-maintenance costs. If similar ordinances to proposed space and water heating appliances addressing other common natural gas end uses such as cooking, laundry, and fireplaces are not anticipated, CARB and the CEC should work with the appropriate stakeholders to ensure that customers are supported with financial and educational resources that encourage them to fully electrify their homes or businesses.

II. Chapter 7 – Infrastructure

A. Infrastructure Demand

PG&E recognizes that infrastructure is critical to the success of California's ZEV goals. Through 2024, PG&E is investing over $400 million in EV infrastructure programs including the recently completed EV Charge Network Program and on-going EV Fleet, EV Fast Charge, EV Schools, EV Parks, and Empower EV Programs. PG&E also recently submitted an application to the CPUC for a $276 million EV Charge 2 (EVC 2) program – an extension of PG&E's EV Charge Network (EVCN) program and PG&E's soon-to-be-complete EV Fast Charge program. In these programs, PG&E has installed or plans to install a substantial amount of infrastructure in under-served communities. PG&E installed 39% of its EVCN ports in disadvantaged communities and proposes to install at least 50% of its EVC 2 ports in under-served communities prioritized by AB 841. In addition to ratepayer-funded programs, PG&E is proud to be a steward of our customers' Low Carbon Fuel Standard (LCFS) revenues, returning revenues to customers via $124M in approved LCFS holdback programs including PG&E's multi-family housing (MFH) and small business direct install program, which is aimed at providing infrastructure to small MFH and businesses that traditionally cannot be served by larger utility programs. PG&E agrees that many of these programs are in

[5] The Challenge of Retail Gas in California's Low-Carbon Future (ethree.com).

the first several years of deployment or are on the cusp of launching and as such, these utility programs provide opportunities for significant scaling in charging infrastructure deployment.

B. Barriers & Opportunities to Meeting the ZEV Infrastructure Demand

PG&E notes that EV infrastructure programs have the potential to put downward pressure on rates as the fixed costs associated with upgrading and maintaining the grid should be spread over more kilowatt hours (kWh), which will in turn lower the per-kWh costs for all users of the grid. Lower per-kWh electric rates will increase the competitiveness of electricity as a fuel compared to alternatives (such as gasoline or diesel) and, in turn, lower the total cost of ownership (TCO) of an EV, further inducing transportation electrification and thereby creating a positive feedback loop. PG&E strongly agrees that continued deployment of incentives and innovation-enabling policies are critical, and that private investment is needed given the scale of infrastructure that must be built. As private investment grows, the positive downward rate pressure feedback loop will grow as well.

The projection of 2.7 million Fuel Cell Electric Vehicles (FCEVs) on the road in California by 2037 seems overly optimistic for FCEVs and extremely pessimistic for adoption of Battery Electric Vehicles (BEVs). FCEV adoption is expected to be highest for heavy-duty vehicles. There are approximately one million heavy-duty trucks on the road in California currently and approximately 25,000 are sold in CA each year.[6] Therefore, this estimate of FCEV's does not seem feasible.

Short-haul heavy duty trucks make up a sizable percentage of our current fleets and are increasingly well received as an option by the trucking industry.[7] While some long-haul heavy-duty trucks will be hydrogen-powered due to specific needs, this number is unlikely to approach a significant fraction of the 2.7 million predicted. The number of FCEVs that will be used for light-duty vehicles and medium-duty vehicles will be even less and may not be economically viable.

It is further expected that many medium- and heavy-duty vehicles will be used for routes that do not require around-the-clock use. Notable examples are school buses, which are mostly used in the early morning and mid-afternoon and least used in the summer months, and trucks that deliver goods earlier in the day (e.g., bakery goods, food service) will be available during peak energy demand and well incentivized to operate as large batteries helping to provide power, especially in critical summer months when air-conditioning is highly utilized.

III. Additional Considerations: Increasing Needed Grid Capacity

The SIP discusses the number and type of chargers required, as well as various funding programs. However, the topic of increasing grid capacity is only briefly touched upon and the

[6] California's New Regulations on Heavy Duty Diesels Is Equivalent of Removing 16 Million Cars from Road (forbes.com).
[7] Researchers Identify Near-Term Opportunity for Heavy-Duty Electric Trucks | News | NREL.

discussion is primarily on various CPUC "planning activities." The SIP does not mention or discuss physical construction nor the time it will require. There is no indication or graph to depict the capacity increases needed to support the electrification goals. Moreover, the draft does not include projections of the actual development and construction of these assets to go along with CARB's regulation-driven transition plans. PG&E encourages CARB to assess the regulation-driven transition timeline alongside the realities of "on-the-ground" grid expansion and construction of necessary infrastructure to ensure grid buildout timelines can adequately support the transition timeline.

Planning and constructing the infrastructure needed to support EVs is a complex issue compounded with statewide implementation set to occur at the same fixed date across the state. ZEV infrastructure is lagging behind ZEV manufacturing due to planning, permitting, and building timelines. PG&E suggests CARB address this in the SIP. The proposed electrification regulations should be tied to the supporting infrastructure and it would be prudent of CARB to detail their role and/or the extent to which CARB will ensure their goals are met.

PG&E appreciates the opportunity to provide these comments on the Draft 2022 State Strategy for the State Implementation Plan. We look forward to continuing the discussion across agencies on these critical topics and the actions necessary to support attainment of the 70 parts per billion 8-hour ozone standard.

Please feel free to contact me if you have any questions or concerns.

Sincerely,

/s/

Jennifer Privett
State Agency Relations Representative, Expert
Pacific Gas and Electric Company